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NEW SPECIES OF NOCTUIDÆ FOR 1909.

BY JOHN B. SMITH, ScD.,

NEW BRUNSWICK, N. J.

***Feralia furtiva*, new species.**

Ground color dark smoky brown; head, thorax and primaries overlaid by mossy greenish yellow. Antennæ white at base. Tip of collar and edges of patagia narrowly black, disc of patagia with some white scales. Base marked with black and white. Primaries with all the maculation contrastingly white, edged with black scales. Basal line white, curved to the median vein at base, whence white lines extend along median and submedian to t. a. line. T. a. line white, black-edged each side, strongly outcurved in the interspaces. T. p. line well removed outwardly, white, irregularly edged with black, very irregular in course, outwardly denticulate on the veins, nearest to outer margin on veins 3 and 4. A series of black terminal lunules, beyond which the white fringes are cut with black. Costa marked with alternate black and white areas. Claviform very large, incompletely outlined in white. Orbicular large, almost round, outlined in white. Reniform very large, incompletely defined above and below, sides white. Secondaries uniformly smoky brown, the fringes soiled whitish. Beneath very dark smoky, primaries marked with black and white along costa, and fringes alternately black and white. Secondaries with a blackish discal blotch, from which a blackish line, edged on each side by a whitish shade, extends to base: with a whitish subterminal line, beyond which the wing is paler toward hind angle. Fringes cut with white and smoky.

Expands 1.40 inches = 35 mm.

Habitat. — Sudbury, Ontario, 1891.

A single female which has been in my collection for many years and which I have always hesitated to describe because I feared it might be a discolored *jocosa*. I have recently seen over 100 *jocosa* however, many of them discolored, and have a dozen now before me; but in none is there any approach to the peculiarly uniform dark color of the new species, combined as it is with the strikingly clear white of the maculation. On the under side the marking of the secondaries is quite different, and on the upper side the absence of the usually conspicuous black markings of *jocosa* seem to authorize a new name. At all events I have risked it.

***Luperina discors* Grote.**

This species was described by Mr. Grote from Kansas in 1881, and in 1890 I referred it as identical with Mr. Morrison's *burgessi* described in 1874 from Massachusetts examples. When I wrote I had only western examples before me; but I had seen and had compared eastern examples. From this comparison and the descriptions, I con-

cluded the species identical and so referred them. Since that time *burgessi* Morr., has occurred in some numbers on Long Island, and on comparing these carefully with examples from Nebraska and Colorado, there seems to be no doubt that Mr. Grote was correct in describing his species as distinct. The eastern species has the primaries comparatively shorter and broader, the ordinary spots more completely outlined and relieved, the median space darker, the connecting bar between the lines broad and well developed, the interspaceal black marks preceding and following the s. t. line very obscure. The western form, *discors* Grote, is more strigate in appearance, the primaries have the apex distinctly drawn out, and the interspaceal lines are very conspicuous toward the margin, usually forming sagittate marks before the punctiform s. t. line. While the ground color is the same, the median space does not contrast definitely, and the connection between the median lines is a narrow streak rather than a bar. With only limited material at hand the species look very much alike and are easily regarded as races or varieties: with a series for comparison the differences are so obvious that the wonder is that they could ever have been regarded as the same.

***Luperina ona*, new species.**

Ground color dark umber brown, overlaid by smoky black. Head concolorous. Collar with a narrow black median line tending to become lost. Thoracic disc tending to become umber brown, the patagia with intense black submarginal lines. Primaries almost uniformly smoky black on perfect specimens; but as they become flown the brown base becomes increasingly apparent, until the wing gets a streaked appearance which is best marked beyond the reniform and in general through the s. t. space. A slender black streak below median vein, extending to the t. a. line; but often imperfect in rubbed examples. Basal line black, marked by geminate costal spots and again on median vein. T. a. line black, geminate, more or less interrupted, rather evenly oblique to the angle below the sub-median: then inwardly bent to, and again outcurved below, vein 1. T. p. line broken, black, more or less completely geminate, very even on the whole, outcurved over cell, then parallel with outer margin. S. t. line a series of yellowish points set into black interspaceal streaks. Claviform small, pointed, black-margined, a narrow bar extending from its tip to the t. p. line. An interrupted black terminal line; veins marked at ends by yellowish points. Secondaries white, with a blackish narrow outer border which is inwardly diffuse. Beneath white, primaries rather densely, secondaries sparsely black powdered.

Expands, 1.50-1.65 inches = 37-41 mm.

Habitat. — Arizona: Santa Catalina Mts., September; Huachuca Mts., August (Barnes); Minnehaha, Yavapai Co., September (Hutson).

Two males and six females in fair or good condition. The three

examples collected by Mr. Hutson are more flown than those from the Barnes collection and therefore seem lighter in color; but there seems no reasonable doubt of their identity. The orbicular is almost lost in most examples, but can be traced in others by black scales and is then large, oval, oblique. The reniform is very like that in *discors*; large, kidney-shaped, outwardly a little relieved by pale scales.

This is an ally of *discors* but much darker in color and easily distinguished from it.

Fishia hanhami, new species.

Dark smoky brown overlaid by black and blackish. Head with a black frontal line. Collar with a broad black transverse line above a median whitish shade band; a narrow blackish line just below tip. Patagia with black submarginal line. Disc blackish powdered, the divided crest conspicuous. Abdomen more evenly smoky gray-brown, dorsal tufts prominent. Primaries with the markings conspicuous, but not well defined. There is a short black curved mark at base below median vein, and a broader, more obvious streak, which extends to the t. a. line below vein 1. A somewhat diffuse, conspicuous black bar connects the median lines in the submedian interspace. T. a. line geminate, inner line tending to become lost, outer black, included space whitish or at least paler, nearly even from costa to middle, then twice outwardly angled before the inner margin. T. p. line obscurely geminate, inner line black, outwardly edged with whitish, taking the form of a double line opposite the anal angle. In course it is outwardly oblique from costa to vein 6, thence more or less lunulate and parallel with outer margin. S. t. line yellowish white, punctiform except toward apex, the spots interrupting a series of interspaceal black streaks. A yellow, narrow terminal line, preceded by small black interspaceal lunules. Claviform obscured in the diffuse connecting streak. Orbicular large, nearly round, incompletely defined, edged and powdered with small white scales. Reniform large, irregular, a little constricted, incompletely defined, with white powdery edging and markings. Secondaries, in the males, dirty white with a broad, somewhat lunulate black terminal line; in the female uniform dark smoky, with a similar terminal line. Beneath, powdery; all wings with an extra-median line and roundish discal mark: in the male the ground is whitish; in the female smoky.

Expands, 1.56-1.70 inches = 39-42 mm.

Habitat. — Victoria, British Columbia, in September.

Two males and one female, from Dr. Barnes' collection, taken by M. A. W. Hanham, to whom I take pleasure in dedicating this species. It is an ally of *evelina* French, but smaller, darker, much more powdery, and with better marked tufting throughout. The male antennæ are distinctly serrate and fasciculate.

Hyppa spaldingi, new species.

General color gray over a dirty yellowish brown. Head brown, front blackish. Thorax of the general gray, over brown; collar yellowish at base below a black transverse line; patagia with narrow black submarginal lines. Primaries with a washed-out

appearance, none of the maculation complete, all the lines practically lost over the costal region. A distinct short black streak at base in the submedian interspace, extending half way to t. a. line. T. a. line obvious only below median vein, whitish, with edges more or less defined by black scales, strongly curved toward base, outwardly convex. T. p. line also whitish, with very narrow dusky defining lines, outwardly oblique to vein 5 where it forms a distinct angle and runs obliquely inward evenly or with slight sinuations to the inner margin. The median lines are connected in the submedian interspace by a narrow black line over which is a more diffuse brown shading, which obscures the small, pointed claviform. S. t. line whitish, best marked by dark shadings in the terminal space and more obscure preceding marks, irregular in course, making two conspicuous outward dents which reach the outer margin on veins 3 and 4 and extend through the fringes. A series of black terminal lunules. Orbicular very long, narrow and oblique, only partially outlined, best marked anteriorly, most of the outline consisting of a narrow edging of white scales. Reniform rather small, obscure, kidney-shaped. Secondaries very pale smoky yellowish at base, with a broad, rather well defined smoky outer border, a terminal black line and whitish fringes. Beneath whitish gray, with black powdering over a yellowish base; all wings with a black discal spot.

Expands, 1.60 inches = 40 mm.

Habitat. — Stockton, Utah, VI, 30.

A single female in good condition, which I take pleasure in naming after Mr. Tom Spalding, its collector, from whom I have received many interesting and rare species as well as much material in the older forms. The new species is so altogether different from the other described species that comparisons seem unnecessary; and yet the habitus is exactly the same, although it also recalls the yellow winged *Xylophasia lunata* and *inordinata*.

***Oncocnemis semicollaris*, new species.**

Ground color powdery ash-gray. Head inferiorly brown, with black edgings above and below the band. Collar inferiorly, deep blackish brown. Thorax and primaries a very even ash gray, with minute black powderings. All the markings of primaries very fine, black and inconspicuous. Basal line just traceable. T. a. line single, slender, a little excurved, with a small outward angle at the middle, from which an equally slender black streak extends to the t. p. line. The latter is well curved over the cell, then deeply drawn inward to the point where it meets the connecting line, then almost upright to the inner margin. There is no s. t. line and no distinct terminal line. A distinct black streak extends from the end of the cell across the t. p. line nearly to the outer margin, and small obscure blackish streaks are in the interspaces just before the outer margin. Ordinary spots wanting. Secondaries whitish at base, becoming dusky toward apex and to the middle of the outer margin; veins also dusky. Beneath whitish, powdery; primaries darker, without markings secondaries paler, with an obvious median line and a small discal spot.

Expands, 1.22 inches = 31 mm.

Habitat. — Peachland, British Columbia, July 8, 1907.

One female in rather poor condition from Dr. James Fletcher, collected by Mr. J. B. Wallis. The specimen seems to have been papered, and has the body somewhat pressed out of shape; but the wings are not marred and the legs are present. The resemblance at first sight is to *griseicollis*; but the connected median lines suggest *figurata*. In the half dark head and collar the species seems to be unique.

***Calocampa mertena*, new species.**

General color smoky gray over a dull rusty yellowish red. Head darker in front; above middle and vertex, of the paler ground or tending to even more yellowish. Collar rusty reddish to yellowish, crossed by narrow darker lines, tipped with blackish. Thoracic disc varying from rusty brown to smoky gray, the contrast with collar varying materially and, in the case of the single female, scarcely marked. Abdomen rather even rusty reddish in both sexes. Primaries smoky gray below the median vein, the costal area rusty reddish over luteous, varying in brilliancy with the freshness of the specimen. All the transverse maculation just traceable. At the base the pale shading is whitish above a black or dark streak, and in this pale area are loop-like brown markings in the interspaces. The t. a. line so far as it is visible has loop-like outcurves in the interspaces. In the cell the orbicular and reniform are marked by a blackish spot in which the orbicular is completely outlined in black and the inner part of the reniform is well marked. The center of the reniform is marked by a contrasting pale crescent, outwardly diffuse and shaded with reddish, and that tint usually shades into the pale area which then extends through the upper half of the wing, to the margin. T. p. line about parallel with the outer margin, usually reduced to small, punctiform venular dots, in the best cases a slender crenulate line. S. t. line marked by a more or less obvious preceding shade, quite rigidly oblique and, above vein 5, emphasized by a black somewhat lanceolate streak. There is a traceable median shade in most of the specimens. Secondaries lustrous, smoky, reddish-brown, semi-transparent. Beneath rusty brownish, varying in depth; secondaries with an obvious outer line and discal spot, primaries with the same maculation indicated.

Expands, 1.70-2.00 inches = 43-50 mm.

Habitat. — Washington; Seattle, Pullman and Olympia; British Columbia; Rossland and Arrowhead Lake.

Eleven males and one female: all the dates for males in spring and examples somewhat flown; the female without date, from Dr. Barnes' collection, in fresh, perfect condition. I have had this series separated in my collection for a long time; but having only males was not certain that I did not have a race of *cineritia* to deal with. The receipt of the female from Dr. Barnes with his own conclusion that it was a distinct species, determines me to give it a name. It is paler throughout than *cineritia*, with the contrasts between costal and infra-median area much more decided, while the transverse maculation is

almost entirely lost. I have well-marked *cineritia* from Calgary, Alberta; Aweme, Cartwright, and Brandon, Manitoba; and none of them is readily confused with this new form.

***Xylina nasar*, new species.**

Ground color of head, thorax and primaries bright, clean bluish gray, all the maculation cleanly and sharply defined, a distinct reddish brown shade in the reniform and above the internal angle of primaries. Head with a black transverse line across lower part of front, below which it is brown. A black line across collar, surmounted by a narrow, clean-cut white line, and shading off inferiorly into the ground. Patagia with margins dusky. Primaries with the transverse lines strongly angulated, narrow, black, edged with gray, tending to become broken. There is a black longitudinal line at base, which extends into the outward tooth of the t. a. line, but does not reach the line, and this line is edged with whitish above and is diffuse inferiorly. The outward tooth of the t. a. line meets an inward tooth from the t. p., the connection between the two formed by a black bar which is diffuse above. An oblique blackish shade extends from the middle of the costa to the t. p. line at vein 3, and this becomes outwardly diffuse and obscures the lower part of the reniform. S. t. line strongly dentate, the teeth on veins 3-4 nearly reaching the outer margin, preceded by a brown and black shade, from which black streaks extend inward below vein 3 and above vein 4. There is an outer, denticulate gray line. Orbicular very large, ovate, concolorous, incompletely outlined. Reniform large, upright, centrally a little constricted, incompletely outlined, inferiorly a little obscured by the oblique dusky shading. Secondaries gray, with a coppery red shading, and the abdomen is smoky, with the same coppery overlay. Beneath whitish with smoky powdering; a vague discal spot and outer line on all wings, tending to become lost on primaries and fairly well marked on secondaries.

Expands 1.44-1.52 inches = 36-38 mm.

Habitat. — Redington, Arizona (Dr. Barnes).

Three males and two females in good condition from Dr. William Barnes. They are allied to the eastern *lepida* and *thaxteri* in type of maculation, but obviously distinct from both. The specific name is a suggestion from Dr. Barnes.

***Xylina atara*, new species.**

Ground color of head, thorax and primaries a rather dull blue gray, all the maculation diffuse, indefinite, no color in the wings at any point. Head with a black, surmounted by a white, frontal line. Collar, with a clean white median line surmounting a black shade which is inferiorly diffused into the ground. Median lines as in *nasar*; but all vague and diffuse, the basal line being scarcely marked in some specimens. The connection between the median lines is a blackish shade, and the oblique shade from costa to t. p. line is just traceable in most specimens. S. t. line similar to that of its ally, without the black, well defined markings extending inwardly. Secondaries whitish with a coppery tinge. Beneath whitish, powdery, all wings with a vague discal spot.

Expands, 1.52-1.60 inches = 38 to 40 mm.

Habitat. — Redington, Arizona (Dr. Barnes).

One male and six females in good condition. I was strongly inclined at first to consider this a washed-out form of *nasar*; but the material is in too good condition to permit this belief.

All the specimens of both sexes are uniformly larger, they all lack the brown and reddish scales in the primaries, and the maculation is uniformly diffuse, not rubbed nor faded. The strong inward black marks from the s. t. line are altogether lacking and, on the whole, I have no doubt we have a good species to deal with. On this point Dr. Barnes agrees with me and I have adopted his suggestion as to a specific name.

***Copicullia luteodisca*, new species.**

Ground color bright bluish gray. Head with vertex and a cross bar below antennæ brown. Base of collar blackish, edges of patagia blackish margined, disc dusky. Abdomen yellowish, with white hair at base, dorsal tuftings small. Primaries with the ordinary spots distinctly outlined, sometimes tinged with yellowish; a diffused yellowish shading in the submedian interspace between the median lines; an obvious streak above the anal angle; the median lines obscure. A very fine blackish line from base to t. a. line in the submedian interspace, very easily lost in a somewhat rubbed example. T. a. line very strongly dentate, irregular, single, not well defined. T. p. line barely traceable by interspaceal blackish marks to vein 2, below which it is narrow, single, blackish and cuts the outer edge of the yellowish shading. There is a traceable, somewhat paler gray s. t. shade line. A series of dusky terminal marks becoming black and continuous below vein 3. A somewhat diffuse black streak from t. p. line in submedian interspace extending obliquely upward to the outer margin just above vein 2. Orbicular ringed with black, broadly oval, center concolorous or tinged with yellow, and with a black dot. Reniform rather small, broad, outlined in black, the upper margin tending to become incomplete, and to a filling of yellowish scales, with blackish central line. Secondaries white with a broad smoky margin, veins smoky and fringes white. Beneath white, tending to a smoky outer margin on all wings; breast gray.

Expands, 1.60 inches = 41 mm.

Habitat. — Deming, New Mexico, September 1-7.

Two females in good condition from Dr. Wm. Barnes. The species is allied to *antipoda* Strck., in the distinct ordinary spots, but differs in the darker coloring, the diffuse supra-anal streak, the yellow shadings on the disc of wing, and the very neatly margined white secondaries. The species seems very different from anything previously described and is not included in any of the forms enumerated by Hampson.

***Cucullia obtusa*, new species.**

Ground color whitish gray, streaked and powdered with black. Head gray inferiorly, with a black frontal line, then with a brown and gray line and a brown ver-

tex. Collar inferiorly brownish, limited by a black transverse line. Thoracic markings broken and indefinite. Primaries powdery and streaked with blackish and black, with a distinct yellowish shade in the discal cell, the ordinary spots lost and the median lines fragmentary. On the costa, oblique diffuse brown streaks mark the t. a. line and median shade, and a geminate black oblique streak marks the inception of the t. p. line. The t. a. line is just indicated by venular marks. The t. p. line may be traced as a narrow, rather even broken line from costa to vein 3. S. t. line present as a diffuse oblique whitish shade, outwardly marked by brownish patches in the interspaces, and by a subapical preceding shade. A series of black terminal dots in the interspaces, beyond which the fringes are cut with blackish. Secondaries whitish with a yellowish tinge at base and with a broad blackish outer margin in both sexes. Beneath, all wings whitish with a broad dusky outer margin.

Expands, 1.50-1.65 inches = 38-41 mm.

Habitat. — Santa Catalina Mts., Arizona; southern Arizona.

Two males and one female from Dr. Barnes; the southern Arizona example marked as taken by Poling. The specimens are very much alike except in size, and are altogether different from any other of our species in the more trigonate primaries; the lanceolate form being almost lost. There is no subanal streak and the type of maculation becomes more like that of some of the normal hadenoid forms.

***Tæniocampa occluna*, new species.**

Ground color dull grayish luteous, more or less densely powdered with smoky and blackish. Head and thorax concolorous, the patagia tending toward a blackish submargin. Primaries with all the maculation present but broken, and so powdered with blackish or smoky scales that the ornamentation is somewhat difficult to make out. Basal line geminate, black, outwardly convex and connected with base by a short blackish streak. T. a. line geminate, rather well removed from base, very incomplete, outwardly oblique, with a very slight outcurve. T. p. line geminate, outer portion becoming punctiform, rather even in general course, outwardly curved to vein 6, then inwardly oblique and with a slight incurve to the inner margin. S. t. line yellowish, irregularly and strongly sinuate, preceded by a somewhat darker shading. A series of small blackish terminal lunules separated by yellowish dots on the veins, beyond which the fringes are narrowly cut with yellow. Claviform very small, loop-like, outlined in black; but tending to become lost. Orbicular round or a little oval, small or moderate in size, concolorous, more or less completely outlined by black scales. Reniform large, a little oblique, somewhat constricted at the middle, the lower portion larger and broader than the upper, dark filled, incompletely outlined by black scales. Secondaries whitish at base, darkening gradually to a smoky terminal margin which is broader in the female; veins smoky and a trace of a smoky discal lunule: fringe whitish. Beneath, powdery; all wings with a more or less obvious outer line and a discal spot: primaries gray, tending to smoky; secondaries whitish, powdering sparse except along costal margin.

Expands, .92-1.12 inches = 23-28 mm.

Habitat. — Mesilla Park, New Mexico, May 9, 1900 (Cockerell),

The single example from Prof. Cockerell has been in my collection since 1900 awaiting additional material.

The antennæ of the male are very shortly pectinated — almost serrate only — and the branches are set with dense lateral ciliæ and furnished with a longer terminal bristle so as to give the appearance of being fasciculate or bristle-tufted. Among the species with similar structure this has no very close allies, and it resembles rather an undersized *Perigea alfenii* Grt. — in fact I have no doubt the two are confused in collections.

***Tæniocampa quinque-fasciata*, new species.**

Ground color varies from mouse-gray to fawn-gray, or even to rusty reddish. Head and thorax concolorous. Primaries more or less irrorated, but not often obviously strigulate; crossed in whole or in part by five variably conspicuous lines or fascia. Basal line single, diffuse, brown, excurved, extending from costa to submedian vein. This line, while it is always traceable, tends to become lost and is rarely conspicuous. T. a. line single, rather well removed from base, with a moderate outcurve, more or less drawn in on the veins. This line is less diffuse, always traceable though sometimes incomplete, and usually well defined. Median shade broad, diffuse, at or a little beyond the middle of the wing, outwardly oblique to lower part of reniform, then with an inward, obtuse angle, obliquely to the inner margin. This broad shade is usually conspicuous and always obvious. T. p. line single, oblique from costa to vein 6, there forming a rather sharp angle and becoming crenulated to the inner margin. This line is usually obvious and sometimes conspicuous over the costal area, but tends to become lost below the angle. S. t. line yellowish-disjunct just below the apex, thence rather even to the inner margin, preceded by a variably distinct dusky shading which may be a mere edging and may extend nearly half way across the s. t. space. A series of small, dark terminal lunules. There is a black or dusky spot in the cell between basal and t. a. line, and usually another at the anterior margin of the orbicular spot. Orbicular large, concolorous, ovate, a little oblique, defined by a narrow, pale ring and tending to become obsolete. Reniform large, broad, kidney-shaped, outlined by a pale ring, tending to become dark filled inferiorly. Secondaries dusky in both sexes, the fringes paler. Beneath whitish, powdery, with a conspicuous outer black fascia and a black discal spot on all wings.

Expands, 1.40–1.65 inches = 35–41 mm.

Habitat. — Colorado; Glenwood Springs VII, Garfield Co., 6000 feet; Washington; Pullman, IV, 19, Seattle: Oregon, Corvallis III, 31; Vancouver, B. C., III, 31, IV, 6; Massett, Q. C. I., IV, 28.

Seven males and four females mostly in good condition, from various sources. My attention was drawn to this species by a somewhat discolored and very fully marked example received for determination from Dr. Fletcher. All the transverse maculation is practically complete, and the 5-fasciata application is obvious. In seeking to differentiate it in other respects I found among my examples of *pacifica*

some that were almost as well if not as conspicuously marked, and I divided them into two series which stood sharply enough defined when once separated.

The new species differs from both *alia* and *pacifica* in more even coloration; in the obvious or even conspicuous median shade; in the even, rather conspicuous s. t. line preceded by a distinct shade, and in the sharp angle formed by the t. p. line on vein 6.

Xylomiges argus, new species.

Head, thorax and primaries pale, powdery ash gray. Head and thorax with darker gray powderings, so as to give the surface a dusty appearance. Collar with a somewhat darker gray line. Abdomen yellowish. Primaries without contrasts, yet all the maculation fairly well traceable. Basal line geminate, darker gray, extended to vein 1. T. a. line geminate at its inception, the inner line tending to become lost, the outer dark gray, a little diffuse, with a very long outward angle in the submedian interspace and a smaller above the margin. T. p. line single, broken, outwardly extended on the veins, with a long inward angle in the submedian interspace, not quite meeting that of the t. a. line. S. t. line pale, fragmentary, best marked by a series of blackish preceding spots in the interspaces. A blackish terminal line, broken by yellowish points on the veins. Claviform short but broad, obscurely outlined by dark scales. Orbicular round or nearly so, a little paler, with a central dusky spot. Reniform moderate in size, broad, a little constricted at middle, oblique, incompletely outlined, usually with a few rusty scales outwardly. As a whole the wing is a little darker over costal region from base to t. p. line, and there is a tendency to an oblique dusky shading from lower edge of reniform to the outer margin just below apex. Secondaries white, with small dusky terminal lunules. Beneath white, primaries powdered with gray, all wings with a darker discal spot and a tendency to an extra-median line.

Expands, 1.32-1.42 inches = 33-35 mm.

Habitat. — California: Witch Creek II, Argus Mts., V.

One male and four females in good condition; the Witch Creek examples through Mr. R. F. Pearsall, the Argus Mts. examples from Mr. . T. Kemp.

This is the narrowest winged species we have and the primaries are more nearly parallel than in any other species. The markings are very obscure and at first sight the species looks only a little mottled, dusty gray.

The antennæ of the male are serrate and fasciculate, and the species thus belongs with *indurata* and *curialis*, while differing markedly from both.

Xylomiges nicalis, new species.

Head, thorax and primaries a soft bluish gray, in the males with a faint reddish tint and a somewhat glossy surface. Head and thorax without obvious maculation.

Primaries, in the male the maculation tends to become altogether lost, the t. a. and s. t. lines being most frequently defined and the reniform usually marked by a reddish cloud. In the female the primaries are more powdery, the veins tend to become darker, and most of the maculation is usually traceable, the s. t. line being always most obvious. In none of the specimens is all the maculation present, so that the description is made from several examples. Basal line geminate, the component parts widely separated, almost crossing the wing and strongly angulated. T. a. line single, diffuse, outwardly angulated at its middle, inwardly so on the subcosta and submedian. A broad, diffuse median shade is traceable across the wing in most examples. T. p. line single, irregular, diffuse, only a little outcurved over cell, and almost less incurved below. A series of interspaceal blackish spots mark the s. t. line. A series of blackish terminal marks, beyond which is a narrow, interrupted pale line at base of fringes. Claviform short and broad, concolorous. Orbicular round or nearly so, not outlined, a little paler than the ground, with a dusky center. Reniform large, upright, incomplete, a little constricted at middle. Secondaries white with a series of black terminal lunules and a tendency toward a series of dusky extra-median venular dots. Beneath white, primaries more or less powdery; all wings with a more or less obvious discal spot and a tendency to an extra-median line.

Expands, 1.40-1.70 inches = 35-42 mm.

Habitat. — Pullman, Washington, April and May.

Seven males and six females, all in good condition, received from the Experiment Station some years ago and but recently separated out. The antennæ of the male are distinctly serrate and fasciculate and therefore this is related to *indurata* and *curialis*. It is however a much larger species than *argus*, broader winged, and with quite a different appearance. The marked difference between the sexes in this species is quite characteristic, and besides the differences already pointed out, it may be added that the males run smaller, although the largest male more than equals the smallest female.

Xylomiges tantiva, new species.

Ground color bluish gray, powdery. Head and thorax concolorous, patagia tending toward a dusky submargin. Primaries powdery, all the transverse maculation obscured, tending toward a dusky shading over costa and in the terminal space. So far as they are traceable, the median lines are much as in *nicalis*; but always incomplete and the t. p. line often altogether lost. S. t. line pale, even, preceded by a narrow dusky shade which is sometimes more or less broken; but never forms a series of separate spots. A dusky terminal line. Fringes interlined with pale. Claviform moderate in size, quite usually traceable. Orbicular round, obscurely outlined, a little paler than the ground, with a dusky center. Reniform large, upright, a little constricted at middle, with a shading of reddish or brown scales outwardly. Secondaries white, with dusky terminal lunules and a tendency to a dusky, venular extra-median line. Beneath white, more or less powdery on primaries; all wings with a discal spot and a tendency to an extra-median dark venular line.

Expands, 1.40-1.60 inches = 35-40 mm.

Habitat. — Redington, Arizona.

Five males and four females from Dr. Wm. Barnes, at whose suggestion I give the specific name. Some of the examples are marked merely southern Arizona, Poling, and were probably taken by that gentleman.

This is yet another of the *curialis-indurata* series, and differs from *nicalis* in the more powdery surface, the practical similarity of the sexes, the continuous s. t. shading before a definite pale line and, lastly, by the much less marked thickening of the male antennæ. The joints here are much less marked than in *nicalis* and the bristle tufts are small and weak.

***Tetanolita greta*, new species.**

A light smoky over a whitish base, the latter becoming more obvious as the specimens become flown. Head and thorax concolorous, the abdomen a little paler, edges of segments narrowly white. Primaries in well preserved specimens rather uniformly light smoky to the t. p. line, beyond which is a whitish or paler shade that is almost evenly oblique and outside of that the terminal area is much darker to the paler fringes. In a flown specimen the contrasts are less marked and an oblique median shade becomes apparent, as well as a dusky t. a. line; both of which are obscured in the full powdering when present. T. a. line vague at best, even, a little out-curved. T. p. line narrow, smoky, crenulate, somewhat irregular but, on the whole, about parallel with the outer margin. S. t. line pale, sinuate, appearing as a powdering in a dark specimen and as a well defined continuous line in a flown example. A series of black terminal lunules. Orbicular a small yellow dot. Reniform an indefinite blackish line or blotch, partly outlined by yellow scales. Secondaries on the whole continuing the maculation of primaries. The base to a little beyond the middle is somewhat paler than primary, then come the continuation of the t. p. line in the form of a narrow, diffuse band, and the narrow pale shading, outside of which there is a broader dark terminal area. Through this runs a continuation of the s. t. line which is continuous, more distinct and obviously denticulate. The terminal black lunules are narrow but form an almost continuous line. Beneath, much paler and more powdery, the transverse maculation of upper surface more obvious but less definite, and all wings with a dark discal spot.

Expands, .90 inch = 23 mm.

Habitat. — San Diego, California IX, 23, X, 6.

Two male specimens from Mr. George H. Field: one of them fully clothed with scales, the other a little flown but otherwise in equally good condition. The palpi curve well up over the vertex and the fringing is rather sparse. Antennæ with conspicuous long, slender lateral bristles and shorter fine hair. At about one third from base is the usual little scale tuft covering only a slight distortion of the antennal joints.

As compared with the described species, this is nearest to *floridana*, than which it is larger, without the slightly reddish tint, and decidedly more powdery. It is broader winged than any others of the species and the pale shade beyond the t. p. line gives the insect a characteristic appearance.

The character of the sexual tufting on the legs cannot be made out for lack of material, at present.

***Tetanolita fulata*, new species.**

Ground color pale, washed-out luteous, shaded with smoky and all the lines smoky. Primaries more densely scaled and a little darker than secondaries, with a broad smoky shade before the t. p. line, not contrasting, and a better marked darkening preceding the s. t. line and extending to the outer margin. The basal line is marked by a smoky costal dot. T. a. line single, smoky, irregular, on the whole with an even outcurve, rather close to base of wing. T. p. line single, irregular, somewhat dentate on some of the veins, outwardly angulate on the costa, then as a whole almost parallel with the outer margin, well removed outwardly so as to leave a broad median space. S. t. line yellowish, well marked through the dark shading, a little irregular but, on the whole, parallel with outer margin. A series of rather well-marked, large, blackish terminal lunules. The orbicular is a small yellow dot, which is sometimes much obscured. Reniform a narrow upright yellow bar or crescent, with a little blackish dot near upper and one near lower border. Secondaries palest at base, gradually becoming smoky outwardly, interrupted at about middle by the continuation of the t. p. line of primaries which is dark, followed by a paler shading, and extends across the secondaries. The pale s. t. line is also continued across the hind wings and is broader, more even, and more conspicuous. A series of black terminal lunules. Beneath paler, more powdery, with the maculation of the upper side incompletely reproduced.

Expands, .76-.82 inch = 19-20 mm.

Habitat. — Pennsylvania; New Brighton IX, 19 (Merrick), Highspire VI, 22; Illinois: Quincy IX, 1-15 (Poling).

The types are two males and two females in good or fair condition, and I have had under examination 5 other examples from the Pennsylvania State collection taken at Harrisburg, at electric light, VIII, 22, 28, and Highspire, V, 26, IX, 28. The Highspire example in my collection came to me through a New Jersey correspondent, and I do not know the original collector.

There is considerable variation in the specimens due mostly to the difference in amount of smoky powdering; the markings remaining about the same. The pattern is the same as in *floridana* Sm., than which this is a somewhat smaller, narrower winged, much darker and less contrastingly marked species. There are other examples in Mr. Merrick's collection I have no doubt.

***Renia exserta*, new species.**

Dull smoky gray or luteous, sometimes with a reddish tint. Palpi darker at sides. Head and thorax concolorous; abdomen scarcely paler, with narrow paler edgings to segments. Primaries rather evenly colored, the basal area on the whole a little paler. T. a. line rigidly upright, yellowish, outwardly shaded with smoky brown. T. p. line even, yellowish or whitish, with a broad outcurve over cell and a less marked incurve below, just enough dark edging to the line to make it stand out conspicuously. S. t. line broken, irregular, yellowish, marked by brownish preceding shades, of which those at about the middle of its course are best marked. A series of small black terminal lunules. Orbicular a small, undefined yellowish blotch. Reniform upright, narrow, yellowish with black dots at either end. Secondaries a little paler than primaries; a narrow, pale, median line continuing the t. p. line of the fore wing across the hind wing; a broken dusky terminal line; between the median line and the margin there is another, more indefinite and fragmentary, pale line. Beneath more rusty, powdery, with extra-median and s. t. line and discal spot on all wings.

Expands, 1.10-1.12 inches = 27-28 mm.

Habitat. — Trenton, Ontario, VIII, 11, John D. Evans; London, Ontario, without date.

One male and female, in good condition. The female, from London, has been in my collection for years and I have kept it associated with *flavipunctalis* for lack of companions to prove that it was not merely an aberration. From whom I received it I do not now remember, and the label gives no indication. Recently I received a nice male from Mr. Evans, and am now convinced that the species is a good one, differing from all others in the genus by the very rigid t. a. line and the very even, contrasting, bi-sinuate t. p. line, which is continued with equal distinctness across the secondaries.

***Renia tilosalis*, new species.**

Ground color in the male blackish smoky throughout; in the female the primaries distinctly red-brown. Head and thorax concolorous with primaries in each sex. Basal line traceable across the costal area in some specimens. T. a. line single, a little darker than the ground, often preceded by a paler or even whitish line, a little irregular, slightly excurved at the middle of its course; but as a whole nearly upright. T. p. line single, narrow, darker than the ground, irregularly denticulate, followed by a paler shading which, in the male, is often whitish and conspicuous, and on the costa forms a distinct paler or whitish spot. S. t. line pale or whitish, very distinct and almost rigid to vein 5, then much more obscure, with an inward angle followed by an outcurve, and that in turn by a much less marked inward angle. In the female the line is more distinct and is usually preceded by a darker shade. A series of black terminal lunules, followed by a pale line at base of fringes. There is a diffuse darker, almost upright median shade crossing the wing over or just within the reniform, much more obvious in the female than in the male, in which it is often lost in the dark ground. Orbicular round, yellowish, not outlined, tending to become lost. Reni-

form a narrow pale or yellowish oval with a black central line; this line often broken into two black dots and sometimes diffused so as to fill the entire spot. Secondaries blackish smoky in both sexes. The t. p. line of primaries is continued as a crenulated blackish line across the wing, and is outwardly bordered by a more or less well-marked diffuse whitish shading. The s. t. line of primaries also is continued across the secondaries as a narrow pale or whitish line preceded by a slightly darker shading. A series of black terminal lunules followed by a pale line at base of fringes. Beneath blackish, powdery, all wings with a discal spot, the outer lines of both wings more prominently reproduced.

Expands, .90-1.00 inch = 22-25 mm.

Habitat. — Long Island, New York, July 24, August 11; Chester, N. J., August 28, Jamesburg, N. J., Oak Ridge, N. J., August 7; New Brighton, Penn., July 19-August 2.

Nine males, six females most of them in good condition. The Long Island and Oak Ridge specimens are from Mr. E. Shoemaker; the New Brighton specimens are from Mr. H. D. Merrick, the others are from the college collection.

This species belongs with *factiosalis* in type of maculation; but is much smaller, quite different in color and varies in a different direction. In well marked males the tendency to a white band following the t. p. line across both wings is often conspicuously shown and on the secondaries some females are almost as well marked. This character is also the most obvious distinctive feature when a series is under observation.

NOTES ON COLEOPTERA.

By W. KNAUS,

McPHERSON, KANSAS.

For the past ten or twelve years, the writer has been on the lookout for *Sicyobius brousi*, described by Dr. Horn in 1884. Season after season the vines of the wild gourd, *Cucumer perennis*, were examined for this Cerambycid, but always without success, until June 6, 1908, when I was at Lindsborg, fourteen miles north of McPherson. On that day, while waiting for a train, I went south along the Smoky Hill River, just beyond the city limits, and on examining a gourd vine was so fortunate as to find a single specimen of this modest little gray and white insect. A careful inspection of all the gourd vines in the vicinity did not disclose any further specimens.

Four days later, while in Ashland, Clark County, I took this species